

REMARKS

The Office Action of September 21, 2005, and the cited art have been carefully considered. The application has been amended to eliminate unnecessary limitations and to correct grammatical and similar errors. Reconsideration of the rejection of the application is respectfully requested based on the amendments and following discussion.

REJECTION 102:

1. Claim 9 was rejected under 35 USC 102(b) as anticipated by Makar, US 3,911,313. Claim 9 has been cancelled for being duplicative.

REJECTION 103:

2. Claims 1 - 8 were rejected under 35 USC 103 over Makar, U.S. 3,911,313 in view of Van Lierop (EP 0,652,587) (corresponding to US 5,557,169).

The rejection of Claims 1-8 as being unpatentable under 35 U.S.C. 103 as being obvious over the combination of Makar '313 in view of Van Lierop '169 is respectfully traversed and reconsideration thereof is requested.

Makar '313 shows a niobium tube 2 crimped to a tungsten rod 3. The tube has a substantially larger diameter than the rod. In fact, the diameter difference forces Makar to use an end seal 5 to cover any leaks in the crimp 4. There is also an intermediate fill material 7. Finally there is a dead zone between the tip of the rod 3, and the end of the tube at 8. Makar '313 nowhere suggests a tight fit between the niobium and the tungsten components.

An objective of the Applicant's design was to be less expensive and still effective. Clearly the additions of the fill and seal materials are costly both in terms of materials and processing. The avoidance of a dead zone was a specific objective of the Applicant. Makar's tube to pin assembly does not show, teach or suggest an inexpensive pin to pin assembly with no deadzone.

Van Lierop '169 shows a tungsten rod with a convex end (hemispherical?) fitted to a niobium rod with a conformally fitting concave (also hemispherical?) end. The two rods have equal diameters. The rod ends are butt-welded.

Van Lierop 169 uses an end-to-end butt weld, and makes no suggestion of any frictional, crimped or other mechanical tension to couple the rod ends.

Because the two rods must fit in the same ceramic capillary tube, and there is a desire to limit the dead space between the electrode rods and the capillary interior wall, it is exceedingly

convenient for Van Lierop to give the rods the same diameter. There is no suggestion to do anything else. There is no suggestion that the rods should have differing diameters.

What a combination of Makar and Van Lierop might be is obscure. Either a weld is made or a crimp. Either the rods have the same diameter or they do not. Mixing the structures makes no sense. One cannot butt weld a smaller diameter rod inside large diameter tube. Conversely, one cannot crimp two equal diameter rods butt ended across hemispherical faces. There is no suggestion in either Makar or Van Lierop of why or how one reference might be useful to the other in resolving some inherent problem. In short, aspects of the references have apparently been chosen using Applicants' claims as a guide when there is no suggestion to do so in the references.

The Office Action also fails to provide any reasoning as to why the teachings of either reference should or could be combined with the other.

"Fact that disclosures of references can be combined does not make combination obvious unless the art also contains something to suggest desirability of combination." In re Imperato; 179 USPQ 730; CCPA; Nov. 15, 1973.

"In the instant application, the examiner has done little more than cite references to show that one or more elements or subcombinations thereof, when each is viewed in a vacuum, is known. The claimed invention, however, is clearly directed to a combination of elements. That is to say, appellant does not claim that he has invented one or more new elements but has presented claims to a new combination of elements. To support the conclusion that the claimed combination is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed combination or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references. . . . Based upon the record before us, we are convinced that the artisan would not have found it obvious to selectively pick and choose elements or concepts from the various references so as to arrive at the claimed invention without using the claims as a guide. It is to be noted that simplicity and

hindsight are not proper criteria for resolving the issue of obviousness." Ex parte Clapp, 227 USPQ 972, 973 (B.P.A.I. 1985)

Withdrawal of the rejection and reconsideration of the claims is respectfully requested.

It is believed that a full and complete response to the Office Action has been made, that the Application as amended is patentably distinct over the cited art, and that the case is now in condition to be passed to issue. Reconsideration of the amended application is therefore requested, and an early favorable notice of allowance is courteously solicited.

Respectfully submitted,

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